a2 concl.

Therefore, as shown in FIG. 18b, the optical signal after amplification is instantaneously increased in level (optical surges), thereby causing degradation in the waveform.

Please replace paragraph [0008] with the following rewritten paragraph:

a3

As such, according to the conventional device 9000, the input optical signal is superposed with a dummy optical signal having a different wavelength. Thus, the input light provided to the amplifier 916 can become temporarily constant in optical power. In this way, optical amplification can be carried while optical surges are suppressed.

Please replace paragraph [0059] with the following rewritten paragraph:

a4

The semiconductor laser 432 is controlled by the controller 434 so as to produce an optical signal having a wavelength λd and identical in amplitude of the received optical signal having the wavelength $\lambda 1$. The semiconductor laser 432 is implemented as a distributed Bragg reflector (DBR) type semiconductor laser, for example. Such a semiconductor laser has characteristics of, when an optical signal having a wavelength different from that of the semiconductor laser is externally provided thereto, suppressing oscillation thereof and transmitting this externally-provided optical signal.

Please replace paragraph [0060] with the following rewritten paragraph:

a5

In other words, while the input light with wavelength $\lambda 1$ to the semiconductor laser 432 is 0 in optical power, that is, while the optical power is 0 during both of the data and no-data periods shown in FIG. 10a, the semiconductor laser 432 produces an optical signal of predetermined power having a wavelength λd under the control of the controller 434. On the other hand, while the input light to the semiconductor laser 432 is not 0 in optical power, the semiconductor laser 432 is suppressed in oscillation in response to the optical power. Therefore, the waveform of the optical signal having the wavelength λd outputted from the semiconductor laser 432 becomes the inverted one of the input light, as shown in FIG. 10b. This optical signal of the wavelength λd corresponds

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a5 cncl.

to the dummy optical signal in the above-described conventional device and optical amplifying device according to the first embodiment.

Please replace paragraph [0075] with the following rewritten paragraph:

a6

Here, consider a case where the optical amplifying device 5000 according to the present embodiment is used to construct a system as shown in FIG. 14. If a distance L1 between the optical amplifying device 5000 and a first optical receiver 30 is different from a distance L2 between the optical amplifying device 5000 and a second optical receiver 32, optical signals of wavelengths λ1 and λd both outputted from the optical amplifying device 5000 are disadvantageously different in transmission characteristic (S/N ratio), even though they are identical in amplitude.

Please replace paragraph [0079] with the following rewritten paragraph:

a7

In general, semiconductor lasers are feedback-controlled based on light output therefrom. However, in the present embodiment, the output light from the semiconductor laser 432 includes the light of the wavelength λ1 and the dummy optical signal of the wavelength λd, and therefore cannot be referred to for feedback control. For this reason, in the present embodiment, the first optical router 536 separates the controller 434 with the optical signal of the wavelength λd from the amplified optical signal for feedback control.

Please replace paragraph [0080] with the following rewritten paragraph:

a8

As described above, according to the present embodiment, the optical signal of the wavelength λd outputted from the first optical router 536 is monitored. Thus, in addition to the effects similar to those in the fourth embodiment, the optical amplifying device according to the fifth embodiment has an effect such that the output light from the semiconductor laser 432 can be controlled more accurately..

Please replace paragraph [0084] with the following rewritten paragraph:

a9

Output lights from the semiconductor lasers 732a and 732b are multiplexed with each other by the optical multiplexer 738, and then amplified by the first optical amplifier 116. At this time, the output lights from the semiconductor lasers 732a and 732b are constant in optical power and, accordingly, an output light from the optical multiplexer 738 is also constant in optical power. Therefore, optical surges at optical amplification do not occur in the first optical amplifier 116.

IN THE ABSTRACT:

Please replace the abstract with the attached substitute abstract.

IN THE CLAIMS:

a10

1. (Amended) An optical amplifying device for amplifying an input optical signal, said device comprising:

a light-emitting means for transmitting the input optical signal and emitting, based on the optical signal transmitted by said light-emitting means, a dummy optical signal having a waveform obtained by inverting a waveform of the input optical signal and having a wavelength that is different from a wavelength of the input optical signal;

a control means for controlling the wavelength of the dummy optical signal emitted from said light-emitting means;

an amplifying means for amplifying the optical signal and the dummy optical signal transmitted from said light-emitting means, and outputting an amplified optical signal; and

a separating means for separating the input optical signal from the amplified optical signal outputted by said amplifying means.

2. (Amended) The optical amplifying device according to claim 1, wherein the dummy optical signal is equal in amplitude to the input optical signal.

A